

REMARKS

Applicants have reviewed the Office Action and reference relied upon by the Examiner. Based upon the above amendments and the following remarks, Applicants respectfully submit that the rejection of claims 37-53, as amended, is improper. Applicants gratefully acknowledge allowance of claims 54-59.

In the Office Action, the Examiner rejected claims 37-53 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In addition, the Examiner rejected claims 37-44 and 47-53 under 35 U.S.C. § 103(a) as being unpatentable over Brothers (4,806,164) as well as Brothers (4,700,780).

The Claims as Amended are not Indefinite.

The Examiner pointed out that claim 42 lists 2-acrylamido-2-methylpropane sulfonic acid and its salts (AMPS) as satisfying the requirements for the first calcium tolerant monomer and claim 43 lists AMPS as satisfying the requirements for the monomer that hydrolyzes to generate anionic carboxylate groups that bind with calcium. Claim 43 has been amended to no longer include AMPS. Applicants did not intend to imply that AMPS could provide both calcium tolerance and bind with calcium on the same polymer and such implication has been corrected by the amendment. Since the specification teaches the functionality requirements, and independent claim 37 calls for the functionality requirements, omission of a specific chemical from dependent claim 43 should not represent new matter.

The Examiner considered claim 44 to be unclear as to whether the monomer referred to is in the copolymer or the homopolymer. Claim 44 has been amended to clearly call for acrylamide monomer in both the polymer and the homopolymer. On page 6 of the specification, lines 14-20,

it is taught that the polymer can be used in a synergistic mixture with a homopolymer, and that the homopolymer is polymerized from a "group 2" monomer previously described for inclusion in the polymer. Also in claim 54 as originally filed, acrylamide monomer is called for in the polymer and in the homopolymer. Therefore, amendment of claim 44 to more clearly call for the use of acrylamide in both the polymer and homopolymer is not new matter.

Thus, claims 42, 43 and 44, as amended, are not indefinite and rejection of claims 37-53 under 35 U.S.C. 112, second paragraph, should be withdrawn.

The Claims as Amended are not Obvious Over Brothers (4,806,164 or 4,700,780).

In order to satisfy a *prima facie* case of obviousness, the prior art must teach or suggest all of the limitations of the claims without the slightest recourse to the teachings in the application. *See, Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd.*, 927 F.2d 1200, 18 U.S.P.Q.2d 1016 (Fed. Cir. 1991). Independent claim 37 has been amended to include the nonobvious subject matter of claim 45. Thus, amended independent claim 37 is directed to a method of cementing a subterranean zone penetrated by a well bore using a cement composition comprising a hydraulic cement, water present in an amount sufficient to form a slurry and a viscosifying and fluid loss controlling additive comprising a mixture of a polymer comprised of at least one monomer which is calcium tolerant, anionic and disperses basic cement slurries, at least one monomer which hydrolyzes in basic cement slurries to generate anionic carboxylate groups that bind with calcium and viscosify the slurries, and at least one monomer which **generates non-ionic pendant groups on the polymer upon hydrolyzing** in basic cement slurries to prevent polymer precipitation **selected from the group consisting of N-alkyl-N-vinyl-acetamide, allyl glycidyl ether and vinylacetate**; and a homopolymer of a monomer which hydrolyzes in basic cement slurries to

generate anionic carboxylate groups that bind with calcium, viscosify the slurries and prevent settling.

Brothers (4,806,164) teaches a cement composition comprising a copolymer of AMPS and styrene along with other additives such as acrylamide. Also, Brothers (4,700,780) teaches a cement composition comprising a copolymer of AMPS, acrylic acid and styrene along with other fluid loss additives such as acrylamide. However, the styrene non-ionic pendant group on the copolymers taught in the cited references is not disclosed as being “generate[d] ... upon hydrolyzing in basic cement slurries” as is required in the instant invention. Also, the copolymers disclosed in the Brothers patents do not include, nor do the references suggest, a monomer selected from the group consisting of N-alkyl-N-vinyl-acetamide, allyl glycidyl ether and vinylacetate as called for by amended claim 37.

Accordingly, the references relied on by the Examiner fail to make obvious all of the limitations of amended independent claim 37. In turn, claims 38-44 and 47-53 are nonobvious because they depend from a nonobvious claim. Therefore, the rejection of these claims under 35 U.S.C. §103(a) is improper and should be withdrawn.

CONCLUSION

In view of the above amendments, Applicants submit that the Examiner’s rejections under 35 U.S.C. 112, second paragraph, and under 35 U.S.C. § 103(a) are improper. Claims 37-44 and 46-53 are in condition for allowance, and such action is respectfully requested. Applicants gratefully acknowledge allowance of claims 54-59.

This is intended to be a complete response to the Office Action mailed on January 30, 2004.

Respectfully submitted,

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